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Knowledge, attitude, and practice of future health care providers about self-medication in a private medical college in Lahore Pakistan

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ABSTRACT

Self-medication is a well-known practice among people, all over the world. The primary objective of this study is to examine the knowledge, attitudes, and practices of future medical professionals on self-medication at private medical colleges. The cross-sectional observational study performed using a validated questionnaire, for present survey. A total of 245 students from the medical, pharmacy, and dentistry faculties participated in this research, comprising of 86 third-year students, 121 fourth-year students, and 38 final-year students. The self-medication among participants has better knowledge and practice with a positive attitude. The knowledge of self-medication has a relationship with the place of study and the student, who has a healthcare provider in their family. The faculty, gender, and healthcare providers in their household are significantly correlated with the attitude on self-medication. Statistics show a close correlation between the practice regarding self-medication, the study of the year, and the faculty. The knowledge of self-medication is better in respondents who have a healthcare provider in their family. The self-medication practice is increasing with the level of study education. The medical students show the most positive attitude towards self-medication.

Keywords: Self-medication, Healthcare provider, Prescription, Non-prescription

1. INTRODUCTION

Individuals who self-recognize their ailments or symptoms and choose and utilize medications to treat them are known as self-medication (Kühler et al., 2024). Taking prescription drugs that are specifically made and labelled to use without a doctor's supervision and are not safe or effective for such uses is known as self-medication for common health issues (Chautrakarn et al., 2021). In many industrialized and developing nations, people turn to self-medication as a frequent solution for minor health issues like fever, headaches, pains, and infections (Yismaw et al., 2023). Antibiotics, analgesics, vitamins, and antipyretics are the most often taken medicine classes for self-medication (Alraddadi et al., 2017).

The topic of self-medication in healthcare is growing more and more significant (Nguyen et al., 2023). The practice of choosing and using drugs by a person (or another member of their family) to cure ailments or symptoms that they have self-identified as well as self-diagnosed is termed self-medication (Ghimire et al., 2023). Self-medication has become more common over the past few decades due to many kinds of reasons, including evolving lifestyles, socioeconomic considerations, easy availability of drugs, inefficiencies in healthcare structures, high prices of medicines, lack of access, and unregulated supply of drugs (Nepal and Bhatta, 2018). Self-medication offers consumers several advantages, including reduced costs and increased independence (Zhang et al., 2022).

Inadequate practice, however, may provide risks like misdiagnosing yourself, harmful interactions between drugs, improper dosage calculations, improper administration, improper treatment selection, obscuring a severe illness, and, or higher dependency and misuse risks (Shafie et al., 2018). According to WHO data, Eastern Europe and Asian countries have a higher prevalence of self-medication (Nepal and Bhatta, 2018). In many nations, self-medication is not common (De-Sanctis et al., 2020). For instance, self-medication has been more common in China, India, Vietnam, Spain, Chile, 40–60, 32, and 71% in each case (Hashemzaei et al., 2021). Between 12 and 90 percent of Iranians belong to different social categories that use self-medication (Shokrzadeh et al., 2019). The majority of medications taken by Iranians for self-medication are antibiotics, eye drops, and pain relievers (Delam et al., 2020).

A cross-sectional study conducted in Karachi, Pakistan, at Aga Khan University, revealed the incidence of self-medication was 76.8% (Yasmin et al., 2022). The survey in Nepal, also showed that analgesics (18.89%), antipyretics (31.0%), and antibiotics (36.2%) were the most often used medications (Banerjee et al., 2016). Studies carried out in Serbia and India, where the overall prevalence of self-medication was 79.9% and 78.6%, respectively, revealed similar results (Bekele et al., 2020). Self-medication is a common practice among medical students, and they have excellent knowledge and experience managing many medications and illnesses, which is the main reason to do self-medication (Siraj et al., 2022).

The objective of the current study is to investigate the medical and allied health students' knowledge, attitudes, and practices about self-medication. As the next generation of healthcare professionals, medical students need well-versed in current medical practices and knowledge to lead society and treat illnesses with suitable treatment. They must have the latest knowledge about techniques to utilize them in making policies for self-medication and save society from the adverse reactions of self-medication. Self-medication is necessary in underdeveloped countries where medical and health facilities are not very good and easily accessible. Medical students can improve patients' life by teaching them how to self-medicate for minor illnesses if they possess advanced knowledge about self-medication.

2. METHODOLOGY

This cross-sectional study was conducted at a private medical college to assess the knowledge and awareness of self-medication among third-year, fourth-year, and final-year medical students. The questionnaire was used to collect data for the current study. The time frame for this investigation was October 10, 2022, to October 12, 2023. The primary objective of this study is to determine the knowledge, attitudes, and practices of medical students regarding self-medication at private medical college through a variety of factor analyses. The total sample size of the study was 245 (medical, dental, and pharmacy), of which 86 students were in their third-year, 121 were in their fourth-year, and 38 were in their final-year.

Our current study included all students who consented to participate and completed the given questionnaire. Our current study did not include first-year or second-year students of medical, dental, or pharmacy from private medical colleges. The present study does not include the physiotherapy students from the private medical college. The questionnaire was designed to find out and evaluate healthcare practitioner awareness, attitudes, and perceptions on self-medication between third, fourth, and final-year students at

private colleges. Participants in this research were divided into groups based on their faculty, gender, living situation, health care provider in the family, and study year.

There are thirty questions total, broken down into three main sections: Knowledge, attitude, and practice of self-medication, which must be finished by respondents. A linear scale with four options—strongly disagree, neutral, agree, and highly agree—was used in the design of the questionnaire's Section A (attitude-based). Choosing the correct response is the basis for section B (Knowledge-based). The practice-based component C relies on yes/no responses. The first section of the questionnaire contained an informed consent form that asked participants demographic questions about age, gender, living situation, faculty, and year of study. The questionnaire's second portion has ten questions about attitudes. The questionnaire's third portion has ten questions about knowledge. There are ten questions for practice in the fourth section.

The attitude-based questions have a maximum score of five. Scores range from 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (strongly agree), to 5 (agree). In the knowledge-based questions, a wrong response carries a 0 score, while a correct response carries a 1. The practice-based questions ask participants to react with a yes or no response, depending on their level of comprehension. Private medical college ethical committee has given this research ethical approval. A written consent form is required to collect participant demographic data. After considering all moral issues, the Faculty of Research Committee granted ethical approval for our investigation. This study has been approved ethically under ZI/05/22.

Statistical Analysis

Respondent data was collected using a validated questionnaire, and it was found that the data was categorical. The significant p-value in the current study is less than 0.05. The data uniqueness was confirmed using kurtosis, skewness, and the Kolmogorov-Smirnov test. To determine the effect size, the statistical analysis of all the categorical data was carried out using chi-square, Fisher's exact test, and Cramer's -V rule.

3. RESULTS

There were 245 students participated in this study. Out of these participants, 77 were from medicine, 91 from pharmacy, and 77 from the department of dentistry. The pharmacy students show higher participation rate (37.1%) in this study. In this study, about 33.2% of males and 67.8% of females had shown their participation. Table 1 provides more demographic information of respondents.

Table 1 The demographic data of participants.

Variable	N %
FACULTY	
Medicine	77 (31.4)
Pharmacy	91 (37.1)
Dental	77 (31.4)
YEAR OF STUDY	
Third	86 (35.1)
Fourth	121 (49.4)
Final	38 (15.5)
PLACE OF STUDY	
Hosteller	150 (61.2)
Non- Hosteller	95 (38.8)
GENDER	
Male	79 (32.2)
Female	166 (67.8)
HEALTH CARE PROVIDER IN THE FAMILY	
Yes	52 (21.2)
No	193 (78.8)

About 54.5% of dental students have adequate knowledge about self-medication as compared to medical and pharmacy students. The students having healthcare providers in their family have 88.5% of adequate knowledge about self-medication. Table 2 provides more specific information regarding the participants' knowledge about self-medication.

Table 2 Knowledge of participants

Variables	Adequate	In adequate	P value
FACULTY			
Medical	38 (49.4)	39 (50.6)	0.756
Pharmacy	45 (49.5)	46 (50.5)	
Dental	42 (54.5)	35 (45.5)	
YEAR OF STUDY			
Third	39 (45.3)	47 (54.7)	0.420
Fourth	65 (53.7)	56 (46.3)	
Final	21 (55.3)	17 (44.7)	
PLACE OF STUDY			
Hosteller	61 (40.7)	89 (59.3)	<0.001
Non- Hosteller	64 (67.4)	31 (32.6)	
GENDER			
Male	43 (54.4)	36 (45.6)	0.461
Female	82 (49.4)	84 (50.6)	
HEALTH CARE PROVIDER IN THE FAMILY			
Yes	46 (88.5)	6 (11.5)	< 0.001
No	79 (40.9)	114 (59.1)	

About 89.6% of medical students have a positive attitude towards self-medication. Final-year students show a positive attitude towards self-medication of about 76.3%. More information about the attitude of participants regarding self-medication is given in (Table 3).

Table 3 Attitude of participants

Variables	Negative	Neutral	Positive	P value
FACULTY				
Medical	1 (1.3)	7 (9.1)	69 (89.6)	<0.001
Pharmacy	22 (24.2)	8 (8.8)	61 (67.0)	
Dental	19 (24.7)	2 (2.6)	56 (72.7)	
YEAR OF STUDY				
Third	17 (19.8)	10 (11.6)	59 (68.6)	0.061
Fourth	16 (13.2)	7 (5.8)	98 (81.0)	
Final	9 (23.7)	0 (0.0)	29 (76.3)	
PLACE OF STUDY				
Hosteller	30 (20.0)	13 (8.7)	107 (71.3)	0.101
Non- Hosteller	12 (12.6)	4 (4.2)	79 (83.2)	
GENDER				
Male	26 (32.9)	6 (7.6)	47 (59.5)	<0.001
Female	16 (9.7)	11 (6.6)	139 (83.7)	
HEALTH CARE PROVIDER IN THE FAMILY				

Yes	2 (3.8)	5 (9.6)	45 (86.5)	0.014
No	40 (20.7)	12 (6.2)	141 (73.1)	

Approximately, 19.5% of BDS students show effective self-medication practices. About 16.5% of male participants, demonstrated good self-medication practices. Table 4 provides further information of about the participants' practice regarding self-medication.

Table 4 Practice of participants

Variables	Poor practice	Fair practice	Good practice	P value
FACULTY				
Medical	19 (24.7)	48 (62.3)	10 (13.0)	0.010
Pharmacy	9 (9.9)	73 (80.2)	9 (9.9)	
Dental	7 (9.1)	55 (71.4)	15 (19.5)	
YEAR OF STUDY				
Third	14 (16.3)	62 (72.1)	10 (11.6)	0.043
Fourth	15 (12.4)	93 (76.9)	13 (10.7)	
Final	6 (15.8)	21 (55.3)	11 (28.9)	
PLACE OF STUDY				
Hosteller	25 (16.7)	104 (69.3)	21 (14.0)	0.391
Non- Hosteller	10 (10.5)	72 (75.8)	13 (13.7)	
GENDER				
Male	6 (7.6)	60 (75.9)	13 (16.5)	0.106
Female	29 (17.5)	116 (69.9)	21 (12.6)	
HEALTH CARE PROVIDER				
Yes	10 (19.2)	38 (73.1)	4 (7.7)	0.227
No	25 (13.0)	138 (71.5)	30 (15.5)	

4. DISCUSSION

In the current study, we observed that dental and pharmacy students have adequate knowledge of self-medication, i.e., 54.5% and 49.5%, respectively. The p-value obtained from the data, equal to 0.756, indicated no substantial correlation. The main reason for this result was that dental and pharmacy students know more about OTC and antibiotic drugs commonly used in self-medication. The study, which involved the pharmacy and medical faculties, was conducted at Qassim University in Buraydah, Saudi Arabia in 2020–2021. In the cited study, pharmacy students showed more adequate knowledge than medical students, in contrast with the results of our study (Alduraibi and Altowayan, 2022).

Final-year students have adequate knowledge (55.3%) about self-medication. With an increasing level of education, they learn more about different diseases and their treatment possibilities, which helps them diagnose the disease and treat it properly. The p-value obtained from the data is 0.420, representing a non-significant correlation. The study conducted at the University of Ibadan, in the Faculty of Pharmacy, Departments of Medicine and Surgery, as well as Nursing, between August and November 2019 is aligned with current study findings (Akande-Sholabi et al., 2021).

The participating student who did not live in a hostel has adequate knowledge (67.4%) compared to the hosteller student (40.7%) with a p-value i.e., < 0.001 which indicates a significant association between adequate knowledge of student on self-medication and place of study. Most hosteller student belongs to distant areas which are probably rural. The facilities and learning abilities are not too good in rural areas which may be one of the best reasons for this behaviour in this current study. The study conducted among medical and pharmacy students at Qassim University, Buraydah, Saudi Arabia, during the period 2020–2021 is similar with present study results (Alduraibi and Altowayan, 2022).

In the current study, males have adequate knowledge (54.4%) as compared to females with a p-value of 0.461. The p-value indicates that there is non-significant relation between gender and self-medication knowledge. The same results were shown by a study that

conducted from November to December 2012 in post-conflict northern Uganda. The cited study was aligned with our research (Ocan et al., 2014). The participating student who has any health care provider in their family have adequate knowledge (88.5%) about self-medication with a p-value of, <0.001 which means there is a significant relationship between health care providers and knowledge about self-medications. The study conducted in 2021, in Riyadh, is in contrast with this study results (Mannasaheb et al., 2021).

Medical students who participated in our study have more positive attitudes (89.6%) with a p-value of <0.001 which shows that faculty have a direct relation with attitude regarding self-medication. As in medical faculty, students have hands-on training, clinical-oriented ward visits, patient interaction, and better knowledge about the diagnosis of disease which makes them confident to treat the ailment ideally. That's why they have a more positive attitude towards self-medication which was also shown by the current study. The same type of study at Zabol University of Medical Sciences, Iran, in 2018, is in contrast with this study findings (Hashemzaei et al., 2021). Fourth-year students have more positive attitude towards self-medication (81.0%) having p-value = 0.061, is no substantial correlation of attitude on self-medication with the year of study. The study was conducted among health sciences students from universities in Riyadh, Saudi Arabia, in 2016, is in contrast with current study findings (Al-Essa et al., 2019).

Non-hosteller shows positive attitude (83.2%) in comparison with hosteller respondents, with the p-value of 0.101, indicates non-significant association between attitude on self-medication and place of study. Hosteller has lesser positive attitude due to their tied life. The similar study conducted in Saudia university, in 2021, is similar with this study findings (Mannasaheb et al., 2022). Female participants have a more positive attitude (83.7%) towards self-medication with a p-value of <0.001 which shows a significant correlation between attitude on self-medication with gender. Females are more conscious about their health. The study conducted at Qassim University, Buraydah, Saudi Arabia, during 2020–2021. In the cited study, females have a positive attitude compared to males which aligned with our research (Alduraibi and Altowayan, 2022).

The participants who have healthcare provider in their family, show more positive attitudes towards self-medication (86.5%), with a p-value of 0.014 which is significantly correlated. The reason behind this positive attitude is that healthcare provider have more knowledge about medicines. The study conducted in 2021, in Riyadh, is similar with this study results (Mannasaheb et al., 2022). Pharmacy students who participated in this study have fair practice (80.2%) of self-medication, with a significant p-value of 0.010. Compared to medical students, the percentage of pharmacy students who were well-versed in this subject was noticeably more significant. Compared to medical and dental students, pharmacy students knew a great deal more about the harmful effects of self-medicated medications, including their correct dose, duration, toxicities, and method of administration, and their generic names. The study conducted in Saudia Arabia, in 2019, is similar with present study results (Alduraibi and Altowayan, 2022).

Final-year students have good practice (28.9%) as compared to other-year students, with a p-value of 0.043 which shows a significant association between year of study and practice on self-medication. As level of education increases, the professionalism seemed in their practice. The study conducted in Saudia, in 2016, is aligned with this study findings (Al-Essa et al., 2019). Non-hosteller students showed fair practice (75.8%) on self-medication in comparison with hosteller students. P value (0.391%) indicated non-significant correlation. Hosteller students have more stressful life in comparison with non-hosteller students. The similar study conducted in Saudia, in 2021, is aligned with present study findings (Mannasaheb et al., 2022).

Male participants have good practice (16.5%) compared to females, with p-value of 0.106, shows no direct relation between gender with practice regarding self-medication. Males are more dedicated to their work, the study conducted in Saudia, in 2018, is in line with this study findings (Hashemzaei et al., 2021). The participants who have healthcare worker in family show fair practice (73.1%) on self-medications. The p-value of 0.227, indicates non-significant association between healthcare provider in their family and practice regarding self-medication. The reason behind it is that they properly guide their family members. The study conducted in Riyadh, in 2021, is in line with current study results (Mannasaheb et al., 2022).

5. CONCLUSION

The self-medication knowledge and practice among participants is better with a positive attitude. The knowledge is higher in respondents who have healthcare providers in their families. The maximum positive attitude is shown in the medical students in this study. The practice of self-medication increases with the increase in the level of study education. The incidence of self-medication rises with the number of studies conducted over the years. Students need to understand that using drugs incorrectly can result in poisoning, resistance to drugs, and worsening side effects.

Author Contribution

All the author contributes equally, and the full manuscript is read by all the authors.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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